in pts with IC. However, a low negative predictive value may be a result of severe ischemia provoked by a low-dose of DOB.

1073-53 Abnormal Perfusion During Acute and Delayed Intracoronary Myocardial Contrast Echocardiography After Myocardial Infarction: Comparison With Thallium SPECT and Dobutamine Echocardiography

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Myocardial contrast echocardiography (MCE) has been recently used to assess myocardial perfusion and viability at the early phase of acute myocardial infarction (AMI). The aim of this study was to compare MCE to rest-redistribution (RR) Thallium SPECT and to low-dose dobutamine echocardiography (LDDE) in the early phase of AMI. We performed MCE immediately and 9 ± 1 days after restoration of TIMI 3 patency by PTCA (n = 17) or thrombolysis (n = 3) in 20 Pts with AMI < 6 hrs via intracoronary injections of sonicated ioxaglate. MCE perfusion was graded according to a semi-quantitative score (0, 0.5, 1) in all hypo or akinetic ASE segments. An average perfusion score (PS) was calculated for each Pt. LDDE was performed in 16 Pts, 10 ± 1 days after AMI (5 to 15 μg/kg/min). Echographic wall motion was graded on a score from 1 (normokinesia) to 4 (akinesia). The average improvement of wall motion score under dobutamine (ΔLDD) was measured for each Pt. RR SPECT was performed 10 ± 1 days after AMI: for each Pt, size of the defect (%) and pathological/normal (P/N) uptake ratio were calculated at rest (%D1 and P/N1) and redistribution (%D2 and P/N2).

	% D1	% D2	P/N1	P/N2	ΔLDD
PS acute	R = 0.64**	R = 0.52*	NS	NS	NS
PS day 9	NS	NS	R = 0.58**	R = 0.61**	R = 0.5*
ΔLDD	NS	NS	R = 0.65**	NS	–

*p < 0.05; **p < 0.01.

Acute MCE reflects myocardial perfusion rather than viability since it correlates with early TI201 defect size, but not with LDDE. Conversely, predischarge MCE is significantly correlated to P/N ratio and LDDE, and may be useful to assess myocardial viability.

1073-54 Comparison of Gated SPECT to X-ray Contrast Angiographic Ventricular Volume Measurements

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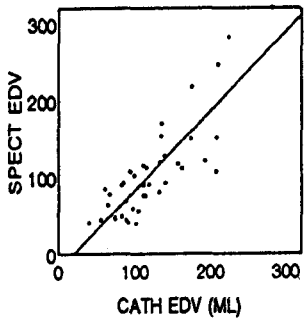
Previously we reported an automated method to measure absolute left ventricular end-diastolic volume (EDV) and end-systolic volume (ESV) and, from these, ejection fraction (EF) from Tc-99m sestamibi R-wave-gated SPECT images acquired as part of routine myocardial perfusion evaluation. While EF has been validated against other radionuclide techniques, direct verification of left ventricular volumes has been performed only for echocardiography, for which geometric model assumptions are similar. Therefore we compared left ventricular function parameters for 41 patients who also underwent x-ray contrast ventriculography (CATH), for which linear regression analysis was:

	N	r	Relation	SEE
EDV	41	0.84	−20.1 + 1.03x	34.7 ml
ESV	41	0.91	−10.6 + 1.20x	23.5 ml
EF	41	0.88	+6.0 + 0.81x	7.2%



ESV by SPECT and CATH was nearly identical (57 ± 56 ml vs. 57 ± 42 ml; p = 0.97), but EDV was lower (107 ± 64 ml vs. 123 ± 52 ml; p = 0.22), leading to lower SPECT EF (53 ± 15% vs. 58 ± 16%; p = 0.16). We attribute these disparities to different assumptions used by the two models, particularly inclusion of more outflow tract for Cath.

1073-55 Are There Any Differences in Detection of Coronary Artery Disease by Myocardial Perfusion SPECT in Diabetics?

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Diabetes mellitus is an important risk factor in patients (pts) with coronary artery disease, but little is known regarding the diagnostic accuracy of myocardial perfusion SPECT in diabetics. Thus we studied 127 consecutive diabetic and 161 randomly selected nondiabetic pts who underwent rest Tl-201/stress Tc-99m sestamibi dual-isotope myocardial perfusion SPECT (DIMPS) with exercise or pharmacologic testing. All pts had coronary angiography within 6 months of the nuclear test and had no history of myocardial infarction or revascularization. Myocardial perfusion images were interpreted using a 20-segment and 5-point scoring system (0 = normal, 4 = absent uptake). Score ≥ 2 with ≥ 2 segments was considered abnormal. The overall sensitivity, specificity and accuracy for detecting coronary artery disease ≥ 50% stenosis and correct identification of multivessel disease (MVD) ≥ 50% stenosis were investigated (Table). No difference between the 2 groups was seen with respect to age and gender (68 ± 11 vs 66 ± 11 yrs and 59% vs 66% male, p > 0.05).

	Diabetic (n = 127)	Nondiabetic (n = 161)
Sensitivity (≥ 50%)	86% (92/107)	87% (107/123)
Specificity (≥ 50%)	50% (10/20)	53% (20/38)
Accuracy (≥ 50%)	80% (102/127)	79% (127/161)
Sensitivity (MVD)	69% (57/83)	48% (36/75)*
Specificity (MVD)	61% (27/44)	63% (54/86)
Accuracy (MVD)	66% (84/127)	56% (90/161)

*no significant differences (p = NS) except higher sensitivity for MVD (p = 0.01) in diabetic group.

Conclusion: DIMPS appears to have comparable accuracy for the diagnosis of coronary disease in diabetic and nondiabetic pts. It may be a more sensitive test for the identification of MVD in diabetics than in nondiabetics.

1073-56 Outcome of Diabetic Patients with Intermediate Pre-test Probability of Coronary Artery Disease Using Exercise SPECT Thallium Imaging

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This study examined the outcome of 256 diabetic patients (pts) (61% men) aged 62 ± 9 years with a pre-test probability of coronary artery disease (CAD) of 69 ± 29%. During a mean follow-up of 32 months, there were 37 cardiac events (death or non-fatal myocardial infarction) (5.5%/year).

All pts had exercise SPECT thallium imaging for evaluation of chest pain syndromes and 16% had prior Q wave myocardial infarction. Univariate Cox survival analysis identified the extent of perfusion abnormality (defined quantitatively by polar maps (x^2 = 14, p = 0.0002) or the number of abnormal segments [20 segment/pt], x^2 = 9, p = 0.002), severity score (extent and severity of perfusion abnormality, x^2 = 12, p = 0.0007) and presence of perfusion defects in more than one vascular territory (x^2 = 13, p = 0.0004) as independent predictors of events. The age, exercise heart rate, exercise work load, ST response and treadmill exercise score (1.7 ± 7.3 vs 2.5 ± 6.4) were not statistically different between those with and without events.

Multi variate survival analysis identified the extent of perfusion abnormality as the most important predictor of events. The pts with a large perfusion defect (≥ 15% of the myocardium) had significantly lower event-free survival than pts with no or small defects (75% vs 93%, p = 0.0001).

Thus, pts with diabetes mellitus and intermediate pre-test probability of CAD can be stratified into low and high risk group, based on results of exercise SPECT thallium imaging. The treadmill exercise score was not useful in these pts.

1073-57 Interpretation of Myocardial Perfusion Tl-201 SPECT Scans Using the Internet: A Technical Feasibility Study

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Interpretation of SPECT myocardial perfusion images is commonly per-